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**** WARNING ** WARNING ** WARNING ** WARNING ****
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December 29, 2004

04-SM-1-61.2/62.2
04-1123C4
ACSTP-1187(008)E

Addendum No. 4

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in SAN MATEO COUNTY NEAR PACIFICA FROM 4.7 KM TO 3.7 KM SOUTH OF LINDA MAR BOULEVARD.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on January 11, 2005.

This addendum is being issued to revise the Project Plans, the Notice to Contractors and Special Provisions, and the Proposal and Contract.

Project Plan Sheet 30 of 65 is revised as follows:

The column entitled "PURE LIVE SEED" is deleted.

In the Special Provisions, Section 5-1.19, "AREAS FOR CONTRACTOR'S USE," is added as follows:

"**5-1.19 AREAS FOR CONTRACTOR'S USE**

Attention is directed to Section 7-1.19, "Rights in Land and Improvements," of the Standard Specifications and these special provisions.

The Contractor may elect to use the designated disposal area to stage operations, facilities, equipment, materials and vehicles. The deployment of staging operations, facilities, equipment, materials and vehicles shall be done in a manner that does not impact or interfere with work. The Contractor is fully responsible for all costs associated with having to move staging operations, facilities, equipment, materials and vehicles to facilitate work in and around the disposal area, and in any portion of work areas within the project limits. The State shall not be responsible for any delays or interference to the work associated with conflicts due to staging activities.

The Contractor shall secure, at the Contractor's own expense, areas required for plant sites, storage of equipment or materials or for other purposes if sufficient area is not available to the Contractor within the contract limits.

The Contractor shall remove equipment, materials, and rubbish from the work areas and other State-owned property which the Contractor occupies. The Contractor shall leave the areas in a presentable condition in conformance with the provisions in Section 4-1.02, "Final Cleaning Up," of the Standard Specifications.

Full compensation for stage operations, and for all costs associated with moving staging operations, facilities, equipment, materials and vehicles shall be considered as included the prices paid for various items of work and no additional compensation will be made therefor."

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," is revised as attached.

In the Special Provisions, Section 10-1.03, "BIOLOGICAL MONITOR," is revised as attached.

In the Special Provisions, Section 10-1.205, "DUST CONTROL," is added as follows:

"**10-1.205 DUST CONTROL**

Attention is directed to Section 10, "Dust Control," of the Standard Specifications and these special provisions.

The Contractor shall prepare and submit a dust control plan in accordance with permit requirements. No staging activities shall commence prior to the Engineer's written approval of the dust plan.

Within 15 working days after the approval of the contract, the Contractor shall submit 3 copies of the dust control plan to the Engineer. The Engineer will have 20 working days to review the dust control plan. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the dust control plan within 10 working days of receipt of the Engineer's comments. The Engineer will have 5 working days to review the revisions. Upon the Engineer's approval of the dust control plan, 4 approved copies of the dust control plan, incorporating the required changes, shall be submitted to the Engineer. In order to allow construction activities to proceed, the Engineer may conditionally approve the dust control plan while minor revisions are being completed. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Full compensation for preparing, submitting, and applying dust control plans shall be considered as included in the prices paid for various items of work and no additional compensation will be made therefor."

In the Special Provisions, Section 10-1.32, "EARTHWORK," the fourth paragraph is revised as follows:

"Attention is directed to Topsoil of these special provisions for obtaining select material for placement on finished embankment slopes. Topsoil shall be placed and spread on completed stepped slopes in conjunction with excavation operations."

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In the Special Provisions, Section 10-1.32, "EARTHWORK," the eighteenth paragraph is revised as follows:

"Excavated material from Projects 04-1123G4 and 04-1123K4 will be delivered and dumped at Area No. 2 as shown on the plans. The Contractor shall be responsible for providing access to both Project 04-1123G4 and Project 04-1123K4 contractors delivering the material as well as for providing operated equipment to move and place the material in a coordinated fashion that does not impede delivery and dumping. Neither project contractor shall deliver and dump more than 500 M3 per day at Area No. 2. The Contractor shall be responsible for placing dumped material within the stockpile area to maintain adequate capacity for daily loads. Placement of the material at other locations within the disposal site may be allowed upon the written approval of the Engineer. The Contractor shall be responsible for excavated material received from Projects 04-1123G4 and 04-1123K4, up through 30 working days prior to project completion as determined by working days bid by the Contractor."

In the Special Provisions, Section 10-1.36, "QUALITY CONTROL SEED TESTING," is deleted.

In the Special Provisions, Section 10-1.38, "EROSION CONTROL (TYPE D)," is revised as attached.

In the Special Provisions, Section 10-1.41, "TOPSOIL," the following paragraphs are added after the last paragraph:

"Upon completion of the grading operations for embankment slopes the topsoil shall be spread to a uniform depth of not less than 0.6 m on embankment slopes and compacted or stabilized in a manner that retains the material in place on the slopes. Topsoil shall be placed on stepped excavation slopes as shown on the plans. The topsoil shall not be compacted or stabilized to the degree that the topsoil is not maintained as a viable growing medium.

Topsoil shall be placed in conjunction with stepped slope construction as the excavation is brought down incrementally. Topsoil shall be placed and spread on completed steps during step slope construction as provided for in Earthwork of these special provisions and as shown on the plans.

Full compensation for topsoil, including all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in excavating, stockpiling, removing topsoil from stockpiles, spreading and compacting or stabilizing topsoil, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer shall be considered as included in the contract unit price paid per cubic meter for roadway excavation (selected material) and no separate payment will be made therefor."

In the Special Provisions, Section 10-1.51, "PLASTIC PIPE UNDERDRAIN," the following paragraphs are added after the last paragraph:

"Permeable material shall conform with the details shown on the plans, and to the provisions in Section 68-1, "Underdrains," of the Standard Specifications, and these special provisions.

Class 3 permeable material shall conform to the following grading requirements:

Grading Requirements

Sieve Sizes (mm)	Percentage Passing
37.5	100
25	90-100
19	40-100
9.5	0-50
4.75	0-15
2.36	0-0.5

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Class 3 permeable material shall have a Durability Index of not less than 40.

At least 90 percent by mass of Class 3 permeable material shall be crushed particles as determined by California Test 205.

Filter fabric for use with permeable material shall conform to the provisions for filter fabric for underdrains in Section 88, "Engineering Fabrics," of the Standard Specifications and the following:

A. The subgrade and trench to receive the filter fabric, immediately prior to placing, shall conform to the compaction and elevation tolerance specified for the material involved.
B. Filter fabric shall be handled and placed in conformance with the manufacturer's recommendations.
C. The fabric shall be aligned and placed in a wrinkle-free manner.
D. Within 72 hours after the filter fabric has been placed, the fabric shall be covered with the planned thickness of overlying material as shown on the plans."

In the Proposal and Contract, the Engineer's Estimate Item 47 is deleted as attached.

To Proposal and Contract book holders:

Replace page 5 of the Engineer's Estimate in the Proposal with the attached revised page 5 of the Engineer's Estimate. The revised Engineer's Estimate is to be used in the bid.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This office is sending this addendum by confirmed facsimile to all book holders to ensure that each receives it. A copy of this addendum and the modified wage rates are available for the contractor's use on the Internet Site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

REBECCA D. HARNAGEL, Chief
Office of Plans, Specifications & Estimates
Office Engineer

Attachments

10-1.01 ORDER OF WORK

Order of work shall conform to the provisions in Section 5-1.05, "Order of Work," of the Standard Specifications and these special provisions.

Attention is directed to "Project Information," "Permits and Licenses," and "Beginning of Work, Time of Completion and Liquidated Damages" of these special provisions. Prior to alteration of existing field conditions, permits obtained for this project require submittal, review, and approval of specific plans.

Attention is directed to "Environmentally Sensitive Area of these special provisions. Prior to beginning work, the boundaries of the Environmentally Sensitive Areas (ESA) shall be clearly delineated in the field.

Attention is directed to "Clearing and Grubbing" and "Roadside Clearing" of these special provisions for removal of vegetation and exotic species.

Attention is directed to "Cooperation" and "Earthwork" of these special provisions for delivery and placement of excavated material from other projects within the vicinity of this project.

Attention is directed to "Plastic Pipe Underdrain" of these special provisions.

Within 15 working days after the approval of the contract, the Contractor shall submit 3 copies of the staging plan to the Engineer. The Engineer will have 20 working days to review the staging plan. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the staging plan within 10 working days of receipt of the Engineer's comments. The Engineer will have 5 working days to review the revisions. Upon the Engineer's approval of the staging plan, 4 approved copies of the staging plan, incorporating the required changes, shall be submitted to the Engineer. In order to allow staging activities to proceed, the Engineer may conditionally approve the staging plan while minor revisions are being completed. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications."

Retaining Wall No. 1 shall be constructed prior to Retaining Wall No. 2.

The last order of work shall be contour grading for the Operations Maintenance Building (OMC) site.

Excavated material delivered from Project 04-1123K4 during contour grading of the OMC site shall be deposited at the disposal site as shown on the plans.

Temporary railing (Type K) and temporary crash cushions shall be secured in place prior to commencing work for which the temporary railing and crash cushions are required.

Attention is directed to "Water Pollution Control" of these special provisions regarding the submittal and approval of the Storm Water Pollution Prevention Plan prior to performing work having potential to cause water pollution.

Attention is directed to "Maintaining Traffic" of these special provisions and to the traffic handling sheets of the plans.

Attention is directed to "Progress Schedule (Critical Path Method)" of these special provisions regarding the submittal of a general time-scaled logic diagram within 10 days after approval of the contract. The diagram shall be submitted prior to performing any work.

At the end of each working day if a difference in excess of 46 mm exists between the elevation of the existing pavement and the elevation of excavations within 1.5 m of the traveled way, material shall be placed and compacted against the vertical cuts adjacent to the traveled way. During excavation operations, native material may be used for this purpose; however, once placing of the structural section commences, structural material shall be used. The material shall be placed to the level of the elevation of the top of existing pavement and tapered at a slope of 1:4 (vertical:horizontal) or flatter to the bottom of the excavation. Full compensation for placing the material on a 1:4 slope, regardless of the number of times the material is required, and subsequent removing or reshaping of the material to the lines and grades shown on the plans shall be considered as included in the contract price paid for the materials involved and no additional compensation will be allowed therefor.

Attention is directed to "Fiber Rolls" of these special provisions regarding the installation of fiber rolls prior to the start of Erosion Control (Type D) work.

Attention is directed to "Erosion Control (Netting)" of these special provisions regarding the installation of erosion control (netting) prior to the application of Erosion Control (Type D) materials.

Attention is directed to "Roadside Clearing" of these special provisions regarding the removal of exotic species prior to "Clearing and Grubbing".

Attention is directed to "Erosion Control (Type B)" of these special provisions regarding the installation of two applications of compost prior to the installation of Erosion Control (Type B) materials.

Attention is directed to Erosion Control (Type B)" of these special provisions regarding the installation of erosion control (netting), wire mesh, anchors and restraints prior to the application of Erosion Control (Type D) materials.

10-1.03 BIOLOGICAL MONITOR

Biological Monitors will be required on this project to monitor for the presence of the California Red-Legged Frog (CRLF), general wildlife, woodrat nests, and bird nests.

The federal Migratory Bird Treaty Act (16 U.S.C. 703 et seq.), title 50 Code of Federal Regulations parts 10, 13 and 21, and California Department of Fish & Game Code Sections 3503, 3513, and 3800 protect migratory birds, their occupied nests and eggs from disturbance or destruction.

The Contractor shall furnish both a permitted Biological Monitor and a general Biological Monitor. The permitted Biological Monitor shall be permitted by the U.S. Fish and Wildlife Service to handle listed species, specifically the California red-legged frog. In addition, the permitted Biological Monitor shall be qualified to identify the presence of woodrat nests and bird nests. The general Biological Monitor shall possess: (1) a 4-year college degree in Biology or Environmental Sciences and (2) a minimum of one year's experience in biological wildlife surveys or wildlife monitoring. In addition, the general Biological Monitor shall also be able to identify the California red-legged frog, general wildlife, woodrat nests, and bird nests. Documentation that the permitted Biological Monitor and general Biological Monitor fulfill these minimum requirements shall be submitted to the Engineer.

The permitted Biological Monitor shall be on-site during the installation of perimeter barriers and temporary fence (Type ESA), and during initial clearing and grubbing activities to ensure work areas are clear of listed species, general wildlife, bird nests, and woodrat nests.. During these activities, the permitted Biological Monitor shall conduct monitoring one hour prior to the initiation of each construction work shift and visually survey the entire area, where fences are to be installed or removed, and where clearing and grubbing activities are to take place. The monitoring shall consist of a survey of the project site including at a minimum the following activities: visual surveys of the entire area focusing on the immediate area where work is proposed for that shift; inspecting under rocks, wood, or other debris; inspecting under and in construction equipment and stored materials; and shaking of vegetation to flush wildlife. Equipment such as, but not limited to, a spotlight and a wooden stick may be used during the monitoring process. During the construction work shift, the permitted Biological Monitor will continue to monitor the area for the California red-legged frog, general wildlife, woodrat nests, and bird nests. If any fence or barrier is found not to be in good condition, the permitted Biological Monitor shall immediately inform the Engineer and Contractor and corrective action shall be taken immediately by the Contractor. After fences and barriers have been installed, the permitted Biological Monitor shall make a final visual survey of all fences and barriers at the end of each work shift to ensure the integrity of the fence and barrier lines such that wildlife will not be able to enter the construction area between work shifts.

The general Biological Monitor shall be on the project site during construction after the installation of all fences and barriers, and the completion of clearing and grubbing operations. The general Biological Monitor shall conduct monitoring one hour prior to the initiation of work each construction work shift in active construction work areas, during construction, and at the end of each work shift. The general Biological Monitor shall perform the following tasks: (1) monitoring of Environmentally Sensitive Areas (ESAs), Perimeter Barriers, and silt fences throughout the entire project site, (2) monitoring of active construction zones to ensure work areas are clear from listed species and other wildlife that might enter the construction zone, woodrat nests, and bird nests and (3) the immediate notification of the permitted Biological Monitor and the Resident Engineer if frogs are found within the construction zone. If any fence or barrier is found not to be in good condition, the general Biological Monitor shall immediately inform the Engineer and Contractor and the Contractor shall take immediate corrective action. The first priority for corrective action shall be areas immediately adjacent to the known CRLF breeding habitat, and, the second priority shall be potentially suitable habitat areas for CRLF. At the end of each work shift, the general Biological Monitor will make a final visual survey of all fences and barriers to ensure the integrity of the fence and barrier lines such that wildlife will not be able to enter the construction area between work shifts.

Both Biological Monitors shall maintain records of monitoring efforts that include the beginning and ending time of monitoring work and a statement clearly stating whether specified species were present or absent, the time when such species were found, condition of the fences, and describing any actions taken. The Biological Monitors shall maintain complete records in their possession while conducting monitoring activities and shall immediately surrender records to the Engineer upon request. All monitoring records shall be provided to the Engineer upon completion of the monitoring work.

When a frog, woodrat nest, or bird nest is encountered by either Biological Monitor or contractor's personnel, construction activities in the immediate area where a frog, woodrat nest, or bird nest is found shall be immediately halted. The Engineer and the on-site Biological Monitor shall be immediately notified. If the permitted Biological Monitor is not present when a frog is encountered, the general Biological Monitor shall immediately notify the permitted Biological Monitor that frogs are present. The permitted Biological Monitor shall come immediately to the project site in order to confirm whether or not a California red-legged frog is actually present on the site. The permitted Biological Monitor, in accordance with U.S. Fish and Wildlife Service guidelines, shall move any California red-legged frog encountered within the construction zone out of the construction zone by placing the frog inside a 5-gallon plastic bucket that contains water and then relocating the frog to the drainage area above the South Portal waterfall drainage. The Contractor shall not resume work prior to receipt of written approval from the Engineer.

In addition, any injured or dead California red-legged frogs found or any unanticipated damage to the species habitat occurring due to construction activities, shall be reported immediately to the on-site Biological Monitor and the Resident Engineer. The Biological Monitor shall: (1) notify the U.S. Fish and Wildlife Service within 24 hrs., and (2) prepare a written report (separate from monitoring report as described elsewhere in these special provisions) by the end of the work shift and submit the report to the Resident Engineer. The written report shall include the following information, as a minimum: the date, time, precise location of the specimen/incident, and any other pertinent information. Injured frogs shall only be handled by the permitted Biological Monitor and the disposition of any such frogs will be arranged under coordination with the U.S. Fish and Wildlife Service.

The on-site Biological Monitor shall dismantle woodrat nests in accordance with California Department of Fish and Game guidelines. The Contractor shall not resume work prior to receipt of written approval from the Engineer.

The permitted Biological Monitor shall perform a pre-construction employee education program prior to the start of construction. All Contractor personnel working on the project shall attend the program. The employee education program shall include descriptions of the California red-legged frog and woodrat nest, photographs of the frog species and the woodrat nest, information regarding the duties of the permitted Biological Monitor and the general Biological Monitor, contact information for each Biological Monitor, and shall direct Contractor employees to immediately notify the on-site Biological Monitor should a Contractor employee encounter a California red-legged frog or species with a similarity of appearance, a woodrat nest, or a bird nest during the progress of the work.

California red-legged frog photo identification cards and information sheets shall be passed out to all workers. An information fact sheet 8.5 inches x 11.5 inches for the California red-legged frog and a laminated California red-legged frog ID card shall be passed out to workers during the pre-construction education program. The information fact sheet shall contain descriptive species identification and habitat information including color photographs of the California red-legged frog, the common bullfrog, and the common treefrog. The frog ID card shall be pocket-size and contain a color photo of the California red-legged frog on one side and California red-legged frog identification information on the other side. An education program shall also be provided for new and substitute personnel brought onto the job after performance of the pre-construction employee education program who have not had the program.

The contract lump sum price paid for the Biological Monitor shall include full compensation for all labor, materials, tools, equipment and incidentals, and for doing all the work involved in monitoring, including but not limited to furnishing the Biological Monitors, training, record keeping, site visits, fence and perimeter barrier inspection, and related monitoring activities.

Full compensation for any delays or stoppage of work to the Contractor's operations resulting from compliance with Biological Monitoring activities up to 15 hours, regardless of the number of occurrences, including inefficiencies and loss of productivity shall be considered as included in the contract price paid for the various items of contract work involved and no additional compensation will be allowed therefor.

If, in the opinion of the Engineer, completion of the work is delayed or stoppage of work resulting from compliance with Biological Monitoring activities is beyond the 15 hours as previously specified, the State will compensate the contractor for such delays to the extent provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

10-1.38 EROSION CONTROL (TYPE D)

Erosion control (Type D) shall conform to the provisions in Section 20-3, "Erosion Control," of the Standard Specifications and these special provisions and shall consist of applying erosion control materials to embankment and excavation slopes, erosion control (Type B), erosion control (netting) areas, and other areas disturbed by construction activities.

The optimal period for applying erosion control (Type D) shall be during the period starting September 1 and ending November 30; or, if the slope on which the erosion control is to be placed is finished during the rainy season as specified in "Water Pollution Control" of these special provisions.

Erosion control materials shall be applied to various constructed areas. Specific treatment shall be applied as follows:

Embankment and excavation slopes and other areas disturbed by construction activities shall be treated with compost, mycorrhizal inoculum, straw, and stabilizing emulsion (Applications A, B and C).

Ditches and embankment slopes lined with erosion control (Netting) shall be treated with compost, mycorrhizal inoculum, and stabilizing emulsion following installation of the netting (Applications A and C).

Excavation slopes treated with topsoil shall be treated with compost, mycorrhizal inoculum, and stabilizing emulsion following the installation of erosion control (Type B) (Applications A and C).

Application of erosion control materials shall be as specified elsewhere in this special provision.

Erosion control (Type D) shall be applied when an area is ready to receive erosion control as determined by the Engineer and in conformance with the provisions in "Move-in/Move-out (Erosion Control)" of these special provisions.

Prior to installing erosion control materials, soil surface preparation shall conform to the provisions in Section 19-2.05, "Slopes," of the Standard Specifications, except that rills and gullies exceeding 50 mm in depth or width shall be leveled. Vegetative growth, temporary erosion control materials, and other debris shall be removed from areas to receive erosion control.

MATERIALS

Materials shall conform to the provisions in Section 20-2, "Materials," of the Standard Specifications and these special provisions.

Endomycorrhizal Inoculum

Endo (arbuscular) mycorrhizal inoculum shall be registered by the California Department of Food and Agriculture and consist of spores, mycelium and mycorrhizal root fragments in a solid carrier suitable for handling by hydro-seeding. The carrier shall be the material in which the inoculum was originally produced, and may include organic materials, vermiculite, perlite, calcined clay, or other approved materials consistent with mechanical application and with good plant growth.

Each endomycorrhizal inoculum shall carry a supplier's guarantee of 80,000 propagules minimum per kilogram. the minimum propagule count shall be shown on each label provided. If more then one fungal species is claimed by the supplier, the label shall include a guarantee for each species of mycorrhizal fungus claimed.

Endomycorrhizal fungal species shall be suitable for the pH of the soil at the planting site. If the inoculum consists of a mixture of species, no more than 20% of the claimed propagule count shall consist of fungal species known to be unsuitable for the pH of the soil at the planting site.

A sample of approximately 28 grams (one ounce) of inoculum will be taken from each inoculum container by the Engineer. The number of propagules will be determined by laboratory testing. Propagules shall include live spores, mycelial fragments and viable mycorrhizal root fragments.

Endomycorrhizal inoculum shall be stored, transported and applied at temperatures of less than 32° C (90° F).

Straw

Straw shall conform to the provisions in Section 20-2.06, "Straw," of the Standard Specifications and these special provisions.

Straw shall be derived from rice straw or from a combination of native grass seed species specified at no additional cost to the State.

Compost

At the option of the Contractor, compost may be either A, B, or any combination of both:

A. Green material consisting of chipped, shredded, or ground vegetation; or clean processed recycled wood products.
B. Class A, exceptional quality biosolids composts, conforming to the requirements in United States Environmental Protection Agency (EPA) regulation 40 CFR, Part 503c.

Compost shall not contain paint, petroleum products, herbicides, fungicides or other chemical residues harmful to plant or animal life. Other deleterious material, plastic, glass, metal or rock shall not exceed 0.1-percent by weight or volume.

Compost shall be thermophilically processed for 15 days. During this process, the compost shall be maintained at minimum internal temperature of 55˚C and be thoroughly turned at least 5 times. A 90-day curing period shall follow the thermophilic process.

Compost shall be screened through a screen no larger than 12 mm.

Compost shall measure at least 6 on the maturity and stability scale with a Solvita test kit.

A Certificate of Compliance for compost shall be furnished to the Engineer in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications. The Certificate of Compliance shall state the Solvita maturity and stability scale test result of the compost.

Stabilizing Emulsion

Stabilizing emulsion shall conform to the provisions in Section 20-2.11, "Stabilizing Emulsion," of the Standard Specifications and these special provisions.

Stabilizing emulsion shall be in a dry powder form, may be reemulsifiable, and shall be a processed organic adhesive derivative Plantago ovata used as a soil tackifier.

APPLICATION

Erosion control materials shall be applied in separate applications in the following sequence:

A. The following mixture in the rates indicated shall be applied with hydro-seeding equipment.

Material	Kilograms Per Hectare (Slope Measurement)
Mycorrhizal inoculum	90.0
fiber	320

Material	Cubic Meter Per Hectare (Slope Measurement)
Compost	2

B. Straw shall be applied at the rate of 4 tonnes per hectare based on slope measurements. Incorporation of straw will not be required. Straw shall be distributed evenly without clumping or piling.
C. The following mixture in the rates indicated shall be applied with hydro-seeding equipment:

Material	Kilograms Per Hectare (Slope Measurement)
Fiber	320
Stabilizing Emulsion (Solids)	140

Material	Cubic Meter Per Hectare (Slope Measurement)
Compost	2

Hydraulic application of materials for erosion control (Type B) and erosion control (Netting) areas shall be applied by hose from the ground. Erosion control (Type D) materials shall be applied at close range onto the slope face such that the materials are well integrated into the erosion control (Type B) or erosion control (netting) and in close contact with ground surface. Application shall be perpendicular to the slope face such that erosion control (Type B) or erosion control (Netting) materials are not damaged or displaced. Any erosion control (Type B) or erosion control (Netting) materials that are damaged or displaced shall be immediately repaired by the Contractor at no cost to the State.

The ratio of total water to total stabilizing emulsion in the mixture shall be as recommended by the manufacturer.

Once straw work is started in an area, stabilizing emulsion applications shall be completed in that area on the same working day.

The rates of erosion control materials may be changed by the Engineer to meet field conditions.

MEASUREMENT AND PAYMENT

Compost (erosion control) will be measured by the cubic meter in the vehicle at the point of delivery in conformance with the provisions in Section 9-1.01, "Measurement of Quantities," of the Standard Specifications.

The contract price paid per cubic meter for compost (erosion control) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in applying compost for erosion control, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The quantity of mycorrhizal inoculum will be measured and paid for by the kilogram as determined from the marked mass on the container.

The contract price paid per kilogram for mycorrhizal inoculum shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in applying mycorrhizal inoculum for erosion control, complete in place, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

ENGINEER'S ESTIMATE
04-1123C4

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
41 (S)	203003	STRAW (EROSION CONTROL)	TONN	24		
42 (S)	203014	FIBER (EROSION CONTROL)	KG	4543		
43 (S)	203021	FIBER ROLLS	M	2927		
44 (S)	203024	COMPOST (EROSION CONTROL)	M3	28		
45 (S)	033703	MYCORRHIZAL INNOCULUM	KG	467		
46 (S)	203026	MOVE-IN/MOVE-OUT (EROSION CONTROL)	EA	9		
47	BLANK					
48 (S)	203061	STABILIZING EMULSION (EROSION CONTROL)	KG	1027		
49 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	M3	4		
50 (F)	049760	ARCHITECTURAL SURFACE (TEXTURED SHOTCRETE)	M2	5190		
51 (S-F)	520101	BAR REINFORCING STEEL	KG	74 800		
52 (F)	530100	SHOTCRETE	M3	1680		
53	620909	450 MM ALTERNATIVE PIPE CULVERT	M	85		
54	620913	600 MM ALTERNATIVE PIPE CULVERT	M	40		
55	680933	200 MM PERFORATED PLASTIC PIPE UNDERDRAIN	M	1590		
56	033704	200 MM NON PERFORATED PLASTIC PIPE UNDERDRAIN	M	240		
57	681501	FURNISH AND INSTALL DRAIN PIPE (HORIZONTAL DRAIN)	M	442		
58	681502	DRILL HOLE (HORIZONTAL DRAIN)	M	400		
59	700858	900 MM BITUMINOUS COATED CORRUGATED STEEL PIPE INLET (2.77 MM THICK)	M	4.6		
60	705336	450 MM ALTERNATIVE FLARED END SECTION	EA	2		